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Docket No.: 782.1099

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Moshe SHAVIT et al.

Serial No.: 09/842,352

Group Art Unit: 2645

Confirmation No.: 6968

Filed: April 26, 2001

Examiner: Lisa Hashem

For: SELECTING THE DELIVERY MECHANISM OF AN URGENT MESSAGE

DECLARATION UNDER 37 C.F.R. 1.131

RECEIVED

MAR 19 2004

Technology Center 2600

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

I, Alexander Tiraspolsky, an employee of Converse Network Systems, Inc. of Wakefield, Massachusetts, the original assignee of the application referenced above, declare that:

1. Moshe Shavit and I are a co-inventors of the application referenced above.
2. Prior to March 22, 2001, we conceived the idea of selecting a delivery mechanism for a message by a sender of the message creating a priority table of delivery devices for a recipient of the message, as described and claimed in our application.
3. Prior to March 22, 2001, we prepared an Invention Disclosure Record (copy attached hereto as Exhibit A) describing our invention, which we forwarded to our in-house patent coordinator Pierre de Villiers. Mr. de Villiers e-mailed the IDR to patent attorneys employed at Staas and Halsey LLP of Washington, D.C. The dates deleted from Exhibit A are prior to March 22, 2001.
4. We received a first draft of the patent application on or about March 22, 2001. We reviewed the first draft of the application and returned comments on or about March 29, 2001. We received a second draft of the application on or about April 5, 2001. We reviewed the

second draft of the application and returned comments on or about April 12, 2001. We received a third draft of the application on or about April 19, 2001. We reviewed the third draft of the application. The application was subsequently filed on April 26, 2001.

5. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true, and furthermore these statement are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any patent issuing thereon.

Respectfully submitted,

Date: 12-Mar-2004

By: 
Alexander Tiraspolsky

EXHIBIT A

Comverse Network Systems, Inc.

Title: Invention Disclosure Record (IDR) - Soft Copy
Number: 999-0421-00

Type: Form

IDR No. _____
Revision: A

Instructions: Use this form to disclose inventions made at Comverse Network Systems, Inc. to the Patent Coordinator, as described more fully in the Patent Policy, Document Number 910-2019-00. A hard copy of this form is available from Document Control as Document Number 999-0422-00.

Fill out this form as completely as possible and attach copies of necessary documents, diagrams, etc. Send an electronic or hard copy of the completed form to the Patent Coordinator. Retain original documents, drawings, listings, machine-readable code, prototypes, presentations, etc. Initial and date each page where indicated. Have two witnesses who are not co-inventors, but who have "ordinary" skills in the art of the invention, review this disclosure and sign each page if they understand the invention.

© [REDACTED] [Click and add current year here, if different] Comverse Network Systems, Inc., Wakefield, MA 01880

1. Title or brief description of the invention:

Selecting the delivery mechanism of an urgent message.

2. Related IDRs (if any):

None that we know of

3. Describe the problem(s) solved by the invention:

In today's solutions we usually send & receive messages using the same media (email, SMS, voice) or a user defined one (email to fax, SMS to fax). Not always the user know the destination "best/active device" to deliver a high priority message. This may cause

Submitter (sign): _____ Date: _____

I have read this disclosure, and I understand it. Based on this disclosure, I could make and use the disclosed invention without undue experimentation.

Witness: _____ Date: _____

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the urgent message to be received late because recipient was not available for chosen delivery method, while being accessible with other delivery methods.

4. Briefly describe how the invention works, i.e. how to build and use the invention. Use additional pages of this IDR form for sketches, block diagrams, flow charts, schematics, etc., and attach these drawings to this form. (These drawings may be hand drawn.) In the description, refer to numbered or lettered items in the drawings. Attach additional documents that describe the invention (if available).

The invention is part of a complete message delivery system which allows urgent message delivery. The main steps of a message delivery are:

- Compose message
- Select delivery mechanism
- Deliver message
- Subscriber notification

We would like to focus on the second part, which is the selection of the delivery mechanism.

Message composition

The priority message may be composed from the following source subsystems:

- voice mail – voice or fax message (from phone or PC);
- SMS – text message (from wireless phone);
- e-mail – formatted text message with possible attachment (from PC or phone);
- Instant Message – text message with attachment (from PC or phone).

The composed message can reside in the system in text, audio, video or any combination.

Selecting delivery mechanism

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The following strategies can be applied when delivering a priority message:

- A - Predefined configuration. This method use predefined delivery mechanism for each recipient. For example, Mr. X will get all his messages using IM
- B – Predefined configuration, based on time of day and day of week. For example, Mr X will receive messages on his PC/Email during business hours and voice message delivery to home after business hours.
- C – Predefined configuration, based on a priority list of methods. For example, Mr. X will get messages on his IM and if he is not online, email will be used.
- D – Same as C above, however priority is dynamically changed based on adaptive mechanism. For example, if a message was successfully delivered to Mr. X using a phone delivery, a new message, which is sent short time (TBD) after, will use the phone delivery as its highest priority trial.

In strategies C & D, it is essential to verify if a message delivery trial was successful as part of the selection process.

This verification can use reachability mechanism.

For strategy A reachability is checked first for the same media/delivery type as the original. If the recipient is not reachable for this type of delivery, the configured priority delivery method is checked for reachability. If the recipient is not reachable for configured method or any delivery attempt failed, system restarts the same delivery cycle after configured timeout. Maximum number of cycles is configured by subscriber and limited by maximum allowed by system operational configuration.

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For strategy B system fetches the priority delivery method based on current time of day and day of the week. The delivery cycle is the same as described in strategy A. If the message was not successfully delivered during one cycle, then the priority method is recalculated at the end of configured timeout based on new current time of day and day of the week, and the next delivery cycle is started according to the new sequence. Number of delivery cycles is limited as described for strategy A.

For strategy C system checks reachability and executes delivery attempts according to priority table set by subscriber sequentially from the method with highest priority till the method with lowest priority. At every step the delivery success is checked and if the success condition met, the message is considered as delivered and process stops. In case all the delivery methods were tried and success conditions was not met, the whole delivery process will restart after the configured timeout in the same sequence. Number of delivery cycles is limited as described for strategy A.

For strategy D two priority tables are used – basic, defined the same as for strategy C, and current, which is the result of the previous message delivery. The system checks the current table for expiration timeout. If timeout did not expired (which mean that successful message delivery to the same recipient occurred within this time interval), the current table is used for delivery cycle. Otherwise the basic table is used. The delivery cycle and repetitions are the same as for strategy C. After a successful delivery, the method used for this delivery takes the highest priority and the new current table is build.

Priority delivery ensured by ability of the system to identify:

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- reachability of mobile phone for voice and SMS delivery (with HLR interrogation),
- availability of IM client (with IM server query),
- time of e-mail retrieval (with e-mail tracking options),
- Outdial call completion control (for fixed phones and fax delivery)

The system may choose and change any delivery method based on ability of the system to convert the content type (speech to text, text to speech, fax to text).

Dealing with voice message:

When a voice messages needs to be delivered to a mobile phone, reachability of addressee may be checked using HLR interrogation (if its on the same mobile network). If voice delivery cannot be accomplished, the voice message may be delivered as voice file attachment to e-mail or IM.

IM addressee online presence can be checked before delivery to IM destination. In case addressee is available for instant messages, the IM with URL of the stored voice message file will be send (or send voice using WAV file attachement).

Delivery/read flag is set in e-mail to control that priority message was received.

Voice message may be converted to text by speech-to-text server and sent by SMS or fax if addressee is reachable for SMS or fax number was provided. In addition, voice message can be sent using CNS VoiSMS server.

Dealing with fax message:

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If a fax is selected as the destination device, the service tries to dial to the fax and deliver the message. A fax message may be send as e-mail attachment (e-mail delivery is controlled in the same way as for voice message) or URL to fax image file may be send with IM. Fax may be converted into text with fax-to-text server and send by SMS. The text of fax after conversion may be then converted into voice by text-to-speech server and delivered to mobile phone (system will read the fax to the addressee) if it is reachable.

Dealing with text message (email, IM, SMS)

Priority e-mail, SMS or IM may be converted into speech and delivered as voice message to mobile phone.

E-mail may be delivered as SMS by conversion formatted text into unformatted and putting only attachment names instead of attachment itself. E-mail may be delivered by IM with URL to the attachment files included in IM.

Text message can be delivered as a voice using TTS technology.

Dealing with video message

The video message delivery is very similar to voice mail delivery with the limitations that outdial to fixed phone number and conversion to text with delivery by SMS is not possible. All other delivery methods – outdial to mobile phone, sending IM with attachment or URL, sending e-mail with attachment or URL and sending fax with converted voice track and sample still picture from

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video are available. Reachability and delivery control is the same as for voice message.

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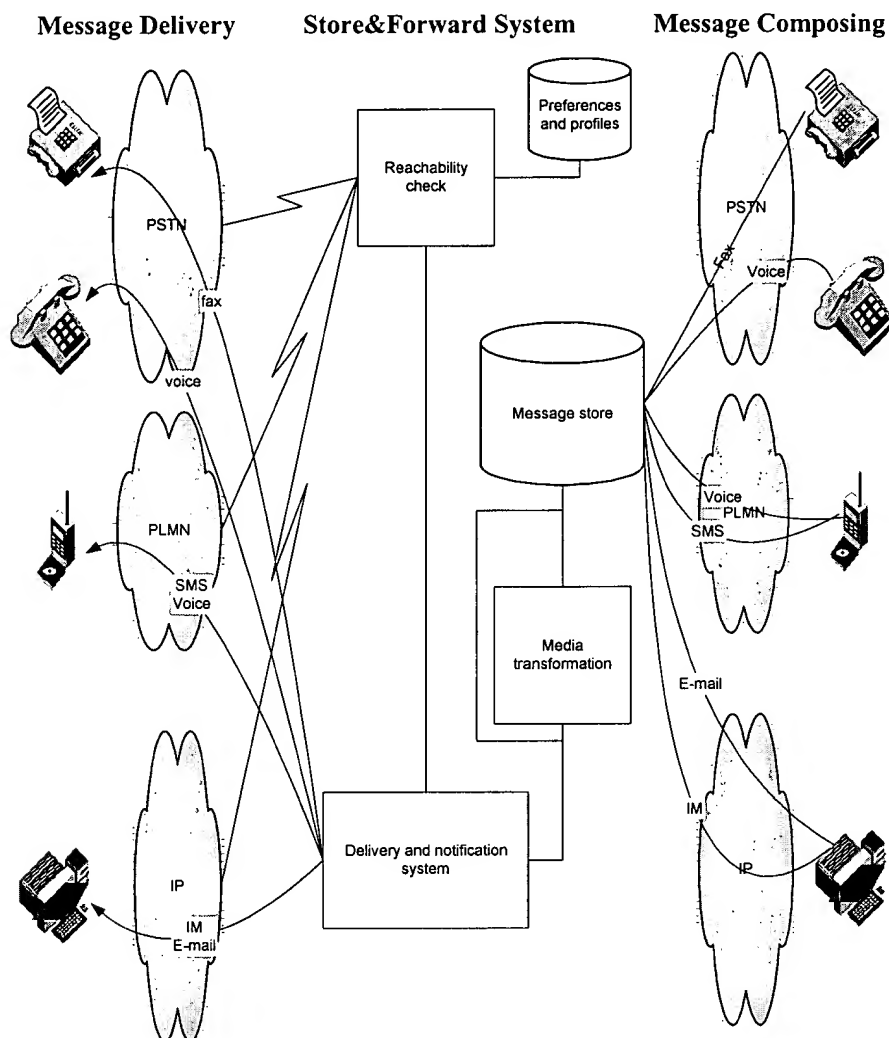
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5. Describe how to use the invention (if not included in the above description):

Users will use the invention as follows:

- Provisioning
 - of their contact addresses (can be synch with external address book)
 - Provisioning of the general delivery strategy and per user strategy
- Message compose
 - Using any allowed media
- Get delivery notification

6. Describe alternative ways to solve the problem or construct the solution that a competitor might use if they were prevented from using the invention, even if those solutions or constructions are less than optimum:

- Deliver message with all possible way simultaneously without reachability and availability check.
- Sent message waiting indication (MWI) with all possible delivery methods and relay on addressee action to retrieve the message by any ro all of these ways. Alternatively use one configured instant notification channel (SMS or IM) to deliver subject of the message and instructions of how it may be retrieved (i.e. VoiSMS, VoIM)

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- Use delivery notification and manually initiate a different device (example: the user sends mail and wait for reply, if fail, try to call)
7. Describe how others have tried, and succeeded or failed, to solve the problem (if known):
- Other tries were focused on receiving problem for recipient's sake. Unknown at this point any attempt to provide service for sender.
8. Describe how the structure of the invention is different than the structure of previous solutions or attempts:
- The difference is the delivery strategy definition and its flexibility
9. Describe advantages of the invention:
- Advantages include
- Least cost delivery
 - Fastest delivery
 - Free subscriber from dealing with which media a message should be sent
 - Free subscriber from remembering all type of a recipient addressees
10. Describe the date, circumstances and names of those involved when the invention was first mentally conceived:
- Moshe Shavit, Alex Tiraspolski, Pierre

Submitter (sign): _____ Date: _____

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11. Describe the date, circumstances and names of those involved when the invention was first built and tested (if ever):

Was not built yet

12. Describe the date, place, circumstances and names of those involved in the first written or oral description of the invention (other than this IDR):

Moshe Shavit, Wakefield, MA, CNS, [REDACTED]

Alex Tiraspolski, Tel-Aviv, Israel, CNS, [REDACTED]

13. Describe the dates, places, circumstances and names of those involved in all past and expected within six months descriptions or demonstrations of the invention to anyone outside Comverse (if any). Are recipients bound by non-disclosure agreements?

Not known at this point

14. Describe the dates, places, circumstances and names of those involved in all past and expected tests of the invention or systems that include the invention by anyone outside Comverse (if any). Are testers bound by non-disclosure agreements?

Currently there are no development and test plans

15. Describe the date and countries of all past and expected within six months sales or offers to sell the invention or systems that include the invention (if any):

None done

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16. For each inventor, supply: full name, work location, telephone number, e-mail address, manager's name, residential address, home mailing address (if different), country of citizenship:

Moshe Shavit, CNS/AMD, Wakefield, WK100, 781-224-8327,
mshavit@comversens.com, Manager's name – Steve Kenyon

Home address: 75 Fifer LN, Lexington, MA 02420, 781-676-2959

Israeli citizenship

Alexander Tiraspolsky, CNS/3G, Tel-Aviv, 418-E5, 03-6452682,
alex_tiraspolsky@icomverse.com, Manager's name – Tamir Ron

Home address: 21/7 Hey B'ayar st., Ashdod, 77421, Israel, 08-8645328

Israeli citizenship

17. Briefly describe each inventor's contribution to the invention:

Both of the inventors initiate the idea and develop the details

18. List inventors who are not employed with Comverse Network Systems, Inc. and their affiliations:

None

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